

THE CLAIMS

What is claimed is:

1. A peptide comprising at least one epitope recognized by a BAT monoclonal antibody, selected from:
 - (a) a peptide having the sequence of any one of SEQ ID NOs 1 through 17;
or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof;
 - (e) a combination of peptides according to (a), (b), (c) or (d).
2. The peptide according to claim 1, wherein the peptide is selected from:
 - (a) a peptide having the sequence of any one of SEQ ID NOs 1, 6, 8, 9, 10, 14, 16; or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof; or
 - (e) a combination of peptides according to (a), (b), (c) or (d) which retains the biological activity thereof.
3. A peptide capable of inhibiting binding of BAT monoclonal antibody to lymphoma cells.
4. The peptide according to claim 3, wherein the lymphoma cells are Daudi or Jurkat cells.
5. The peptide according to claim 3, selected from:
 - (a) a peptide having the sequence of any one of SEQ ID NOs 1 through 17;
or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or

- (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof; or
 - (e) a combination of peptides according to (a), (b), (c) or (d) which retains the biological activity thereof.
6. The peptide according to claim 3, selected from:
- (a) a peptide having the sequence of any one of SEQ ID NOs 1, 6, 8, 9, 10, 14, 16; or
 - (b) a peptide having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof; or
 - (e) a combination of peptides according to (a), (b), (c) or (d).
7. A peptide useful for inhibiting tumor growth selected from:
- (a) a peptide having the sequence of any one of SEQ ID NOs 1 through 17; or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof;
 - (e) a combination of peptides according to (a), (b), (c) or (d).
8. The peptide according to claim 7, wherein the peptide is selected from:
- (a) a peptide having the sequence of any one of SEQ ID NOs 1, 6, 8, 9, 10, 14, 16; or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or

- (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof; or
 - (e) a combination of peptides according to (a), (b), (c) or (d).
9. A peptide capable of inducing an immune response against tumor cells, selected from:
- (a) a peptide having the sequence of any one of SEQ ID NOs 1 through 17; or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof;
 - (e) a combination of peptides according to (a), (b), (c) or (d).
10. The peptide according to claim 9, wherein the peptide is selected from:
- (a) a peptide having the sequence of any one of SEQ ID NOs 1, 6, 8, 9, 10, 14, 16; or
 - (b) a homolog having at least 70% identity with a peptide of (a) and retains the biological activity thereof; or
 - (c) a fragment of a peptide of (a) or (b) having the biological activity thereof; or
 - (d) a variant, derivative or salt of a peptide of (a), (b) or (c) which retains the biological activity thereof; or
 - (e) a combination of peptides according to (a), (b), (c) or (d).
11. A polynucleotide encoding at least one peptide recognized by a BAT monoclonal antibody.
12. The polynucleotide according to claim 11, having a sequence selected from SEQ ID NOs 18 through 32.
13. The polynucleotide according to claim 11, having a sequence selected from SEQ ID NOs 18, 22, 24, 25, 29, 31.
14. A construct comprising a polynucleotide encoding for at least one peptide recognized by a BAT monoclonal antibody.
15. The construct according to claim 14, wherein the polynucleotide comprises a sequence selected from SEQ ID NOs 18 through 32.

16. The construct according to claim 14, wherein the polynucleotide comprises a sequence selected from SEQ ID NOs 18, 22, 24, 25, 29, 31.
17. A vector comprising a polynucleotide encoding at least one peptide recognized by a BAT monoclonal antibody.
18. The vector according to claim 17, wherein the polynucleotide comprises a sequence selected from SEQ ID NOs 18 through 32.
19. The vector according to claim 17, wherein the polynucleotide comprises a sequence selected from SEQ ID NOs 18, 22, 24, 25, 29, 31.
20. The vector according to claim 17, wherein the vector is a plasmid or a virus.
21. A host cell comprising a vector comprising a polynucleotide encoding at least one peptide recognized by a BAT monoclonal antibody.
22. The host cell according to claim 21, comprising a polynucleotide having a sequence selected from SEQ ID NOs 18 through 32.
23. The host cell according to claim 21, comprising a polynucleotide having a sequence selected from SEQ ID NOs 18, 22, 24, 25, 29, 31.
24. The host cell according to claim 21, capable of expressing at least one epitope recognized by BAT monoclonal antibody.
25. A pharmaceutical composition comprising as an active ingredient at least one peptide according to claim 1 and a pharmaceutically acceptable carrier.
26. A pharmaceutical composition comprising as an active ingredient a polynucleotide according to claim 11 and a pharmaceutically acceptable carrier.
27. A method for treating cancer in a subject in need thereof comprising the step of administering a therapeutically effective amount of a composition according to claim 25.
28. A method for treating cancer in a subject in need thereof comprising the step of administering a therapeutically effective amount of a composition according to claim 26.
29. An immunomodulatory vaccine comprising at least one peptide recognized by a BAT monoclonal antibody and a pharmaceutically acceptable adjuvant.
30. An immunomodulatory vaccine comprising at least one peptide according to claim 1, wherein the peptide is recognized by a BAT monoclonal antibody and a pharmaceutically acceptable adjuvant.

31. The vaccine according to claim 29, wherein the adjuvant is selected from the group consisting of an aluminum salt and an oil in water emulsion.
32. The vaccine according to claim 30, wherein the adjuvant is selected from the group consisting of an aluminum salt and an oil in water emulsion.
33. A diagnostic agent for detecting cancer comprising a peptide recognized by a BAT monoclonal antibody, according to claim 1.
34. An antibody recognizing at least one peptide according to claim 1.
35. The antibody according to claim 34, selected from the group of: intact antibody, an antibody fragment selected from: Fv, F(ab'), F(ab')₂ or a single chain antibody. 10
36. The antibody according to claim 34, selected from the group of: monoclonal antibody, polyclonal antibody, recombinant antibody, synthetic antibody fragment.

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